

REMARKS

This paper is submitted in reply to the Office Action dated April 17, 2008 within the three-month period for response. Reconsideration and allowance of all pending claims are respectfully requested.

In the subject Office Action, claims 1-2, 6, 8, 10-15, 17-19, 22-23, 25, 27-32, 34 and 36 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 7,296,125 to Ohran in view of U.S. Patent No. 6,549,992 to Armangau et al. (Armangau); claims 3, 20 and 37 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ohran in view of Armangau and in further view of U.S. Patent Application Publication No. 2004/0268067 by Yamagami; claims 4 and 21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ohran in view of Armangau and in further view of U.S. Patent Application Publication No. 2004/0210563 by Zait et al. (Zait); claims 7, 16 and 24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ohran in view of Armangau and in further view of U.S. Patent Application Publication No. 2005/0021565 by Kapoor et al. (Kapoor); and claims 9 and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ohran in view of Armangau and in further view of U.S. Patent No. 6,647,473 to Golds et al. (Golds). This paper will focus on the rejections of amended independent claims 1 and 14.

Applicant respectfully traverses the Examiner's rejections to the extent that they are maintained. Applicant has canceled non-method claims 17-32 and 34 and amended independent claims 1 and 14 to include subject matter of now canceled claims 2 and 37, as well as some of the limitations of claim 10, among other changes to the claims. Claims 10-13 and 15 are currently amended for consistency with now amended independent claims 1 and 14. Claim 2 is also now currently canceled. The Examiner will note that claims 5, 33 and 35 were previously canceled; leaving claims 1, 3, 4, 6-16 and 36 pending in the application. Applicant respectfully submits that no new matter is being added by the above amendments, as the amendments are fully supported in the specification, drawings and claims as originally filed. Applicant also notes that the amendments made herein are being made only for facilitating expeditious prosecution of

the aforementioned claimed subject matter. Applicant is not conceding in this application that the originally claimed subject matter is not patentable over the art cited by the Examiner, and Applicant respectfully reserves the right to pursue this and other subject matter in one or more continuation and/or divisional patent applications.

As an initial matter, Applicant wishes to thank the Examiner for his consideration extended in the telephonic interview between the Examiner and Applicant's representatives on May 29, 2008. In the interview, proposed amendments to the claims were discussed, and the Examiner indicated that the proposed claims (which are consistent with the amendments made in this paper) would overcome the current rejections. If the Examiner is of the belief that the claims as they presently read are not yet in proper condition for allowance, the Examiner is urged to contact the undersigned for a follow-up telephone interview.

Now turning to the subject Office Action, and specifically to the Examiner's §103(a) rejection of independent claim 1, this claim generally recites a method for updating data at a backup system that tracks updates made to a primary system, the method comprising creating a first group including a first plurality of update requests in response to receiving a first update request from an application, the first plurality of update requests including the first update request. In response to receiving a second update request from the application prior to completing the first plurality of update requests, a second group including a second plurality of update requests is created, the second plurality of update requests including the second update request. The first update request of the first plurality of update requests in the first group has an order dependency relative to the second update request of the second plurality of update requests in the second group. The update requests in each of the first and second groups are capable of being processed concurrently and without regard for order relative to one another. The method further comprises concurrently completing the first plurality of update requests of the first group, and, after concurrently completing the first plurality of update requests, concurrently completing the second plurality of update requests of the second group.

The most recent amendments to independent claim 1 include, in no particular order, (1) receiving a first update request from an application, a first plurality of update requests including that first update request; (2) creating a second group including a second plurality of update requests in response to receiving a second update request from the application prior to completing the first plurality of update requests, the second plurality of update request including the second update request; and (3) the first update request of the first plurality of update requests in the first group having an order dependency relative to the second update request of the second plurality of update requests in the second group. As such, independent claim 1 now generally describes a method for updating data that creates groups of update requests in response to receiving more than one update request from an application. For example, a first group of update requests is created in response to receiving a first update request from an application, while a second update request from the same application and prior to completing the first group “triggers” the creation of a second group of update requests. The update requests inside each group are capable of being processed concurrently and without regard for order relative to each other, while the groups themselves are not. Support for these amendments may be found throughout the specification. In particular, support for the amendments described in (1) above may be found, for example, in FIG. 4 and FIG. 6, as well as paragraphs [0014], [0037], [0038], [0040]-[0042], [0049], and [0055] of the published application. Support for the amendments described in (2) above may be found, for example, in FIG. 5 and FIG. 6, as well as paragraphs [0015], [0037], [0048], and [0056] of the published application. Finally, support for the amendments described in (3) above may be found, for example, in FIG. 6 and paragraphs [0013], [0048], and [0056] of the publication application.

Amended independent claim 1 now recites that the first group is created in response to receiving a first update request from an application. In the most recent rejection, the Examiner alleges that Ohran creates a first group with a plurality of update requests. See Ohran, FIG. 2 and snapshots at T0, T1, T2, etc. However, Ohran fails to disclose creating a group in response to receiving a first update request. In fact, Ohran fails to disclose creating groups of update requests at all. Rather, Ohran snapshots physical locations of data at regular intervals, for example, from T0-T1, T1-T2, etc.

These snapshots are not groups of “update requests” as indicated in claim 1, nor are these snapshots created in response to receiving an update request from an application. As such, Ohran fails to teach or suggest all the limitations of claim 1. Armangau cannot relieve Ohran’s deficiency, as this reference addresses buffering and journaling snapshots. As such, Armangau does nothing to address update requests other than disclosing that snapshot requests may be issued from a host. See Armangau, col. 6, lines. 34-52. However, Armangau still fails to disclose groups with a plurality of update requests as well as creating a group in response to receiving an update request. In regards to Yamagami, this reference does nothing more than journal snapshots still fails to relieve the deficiencies of Ohran.

Amended independent claim 1 also recites creating a second group including a second plurality of update requests in response to receiving a second update request from the application prior to completing the first plurality of update requests, the second plurality of update request including the second update request. In this way, a second update request from the same application prior to completing the first plurality of update requests effectively “triggers” the creation of the second group, given that the creation of the second group is “in response to receiving a second update request from the application.” Both Ohran and Armangau fail to teach or suggest creating a second group specifically in response to receiving a second update request from an application, as is required by claim 1. Ohran merely snapshots data while Armangau is directed towards buffering and journaling snapshots. Neither reference teaches or suggests, either alone or in combination, the creation of a second group in response to receiving a second update request from an application prior to completion of a first group of a first plurality of update requests that include a first update request from the application. Ohran discloses that each snapshot is taken at a discrete time interval, while Armangau discloses that snapshot requests are buffered and journaled. As such, Ohran and Armangau, either alone or in combination, still fail to teach or suggest creation of a second group in response to receiving a second update request consistent in the manner of claim 1. Furthermore, Yamagami fails to relieve the deficiencies of the combination of Ohran and Armangau. Yamagami, similarly to Armangau, discloses journaling snapshots.

However, Yamagami still fails to disclose or suggest creating the second group creation in response to receiving a second update request in the manner of claim 1.

Amended independent claim 1 further recites that the first update request of the first plurality of update requests in the first group has an order dependency relative to the second update request of the second plurality of update requests in the second group. As such, claim 1 indicates that there is an order dependency between two plurality of update requests based on individual update requests within those plurality of update requests. The Examiner indicates that Ohran discloses that a first group T0-T1 has an order dependency relative to a second T1-T2 as shown in FIG. 2. However, Applicant respectfully submits that order dependency in Ohran is relative to time (for example, times T0, T1, T2, etc.), while order dependency in claim 1 is relative to receiving update requests (receiving the first update request and creating a group, then receiving the second update request prior to completion of the first group and creating the second group). Additionally, neither Armangau nor Yamagami relieve this deficiency, as both references also fail to teach or suggest an order dependency between two groups of update requests based on individual update requests within those groups of update requests.

Applicant respectfully submits that the Examiner has made other assumptions with regards to claim 1 that are not supported by the art of record. In particular, the Examiner indicates in his rejection of claim 1 that Armangau discloses “asynchronous processing of snapshot updates,” citing col. 17, lines 6-28. Therefore, the Examiner alleges that Ohran in view of Armangau discloses “concurrently completing” update requests within groups. However, Applicant respectfully submits that the Examiner is taking an excessively broad reading of the Armangau. In fact, Armangau fails to disclose “processing” of update requests at all. Armangau, at best, discloses “asynchronous copying.” Thus, Applicant respectfully submits that the Examiner is making a far leap from the “copying” of Armangau to the “completion” indicated in claim 1. The plain language of the claim requires “concurrently completing” the first plurality of update requests, then “concurrently completing” the second plurality of update requests.

Armangau fails to teach or suggest any concurrent completion at all, so the reference fails to disclose this recited feature of claim 1.

For the foregoing reasons, Applicant respectfully submits that amended independent claim 1 is non-obvious over Ohran, Armangau, Yamagami, and/or the other cited prior art, either alone or in combination, and the rejection should be withdrawn. Reconsideration and allowance of claim 1, and of claims 3, 4, 6-13, and 36 that depend therefrom, are therefore respectfully requested.

Next with regard to the Examiner's rejection of independent claim 14, this claim has been amended similarly to claim 1, and now generally recites a method for updating data at a backup system that tracks updates made to a primary system. The method includes synchronously processing a plurality of groups of update requests. A first update request from an application in a first group of update requests from among the plurality of groups has an order dependency relative to a second update request from the application in a second group of update requests from among the plurality of groups. The update requests in each group are capable of being processed concurrently and without regard for order relative to one another. Additionally, receipt of the second update request prior to processing of the first update request initiates the creation of the second group of update requests. The method further comprises asynchronously processing the update requests in each group.

Because independent claim 14 was amended in a similar manner as claim 1, and for the foregoing arguments presented in connection with amended independent claim 1, Applicant respectfully submits that independent claim 14 is non-obvious over Ohran, Armangau, Yamagami, and/or the other cited prior art, either alone or in combination, and the rejection should be withdrawn. Reconsideration and allowance of claim 14, and of claims 15 and 16 that depend therefrom, are therefore respectfully requested.

Next with regard to the rejection of independent claims 17, 32 and 34, the Examiner will note that all of these claims have now been canceled. Accordingly, all of the rejections have been rendered moot.

As a final matter, Applicant traverses the Examiner's rejections of the dependent claims based upon their dependency on the aforementioned independent claims. Nonetheless, Applicant notes that a number of these claims recite additional features that further distinguish these claims from the references cited by the Examiner. However, in the interest of prosecutorial economy, these claims will not be addressed separately herein.

In summary, Applicant respectfully submits that all pending claims are novel and non-obvious over the prior art of record. Reconsideration and allowance of all pending claims are therefore respectfully requested. If the Examiner has any questions regarding the foregoing, or which might otherwise further this case onto allowance, the Examiner may contact the undersigned at (502) 561-6270. Moreover, if any other charges or credits are necessary to complete this communication, please apply them to Deposit Account 23-3000.

Respectfully submitted,

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Date

/Scott A. Stinebruner/
Scott A. Stinebruner
Reg. No. 38,323
WOOD, HERRON & EVANS, L.L.P.
2700 Carew Tower
441 Vine Street
Cincinnati, Ohio 45202
Telephone: (513) 241-2324
Facsimile: (513) 241-6234